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these two groups the term *Unionidæ* ought to be confined. The Asiatic *Parresia* and *Lamelidens* are not known to the writer but it would seem that they were derived from a different Margaritanoid stock and may form a family by themselves. Omitting these the general grouping adopted by the writer is as follows:

Superfamily Unionoideæ.

Family Margaritanidæ Ortmann, 1910.

Family Hyriidæ Swainson, 1840 (emend.).

Subfamily Hyriinæ s. s.

? Subfamily Mutelinæ Gray, 1847.

Family Quadrulidæ Von Ihring, 1901.

Subfamily Quadrulinæ s. s.

Subfamily Pleurobeminæ Hannibal, 1912.

Family Unionidæ Swainson, 1840.

Subfamily Unionidæ s. s.

Subfamily Anodontinæ Swainson, 1840.

Family Lampsilidæ Von Ihring, 1901.

Subfamily Lampsilinæ s. s.

Subfamily Propterinæ Hannibal, 1912.

*Symphynota* and *Anodonta* in the sense used by Ortmann are probably composite genera due to an analogous degeneration of the hinge in several allied stocks. "*Anodonta*" *imbecillis* appears to group with *S. compressa* in *Symphynota* though perhaps entitled to subgeneric distinction. *S. complanata* is rather allied to "*Anodonta*" *cataracta* and its subspecies *grandis*. Neither of these are *Anodontas* in the true sense of the word, for that group like *Unio* and *Migranaja* belongs to the Old World and the west coast of North America. The *complanata-cataracta* group might take the name *Pterosygna* Raf. (type *Alasmodonta complanata* Barnes) if that name is available. *A. costata* probably belongs here also but seems a rather aberrant member.

The writer would be inclined to give *Carunculina* and *Micromya* generic rank as distinct from *Eurynia*.

Considering the fact that Dr. Ortmann has had to deal with a group in which the nomenclature of the genera has been very imperfectly worked out and the wealth of nominal species and varieties compared with those which may be ultimately recognized as valid is amazing, he is certainly to be congratulated for the care he has taken in presenting clearly a large mass

of facts without falling into any serious nomenclatural pitfalls.

HAROLD HANNIBAL

STANFORD UNIVERSITY, CAL.,

August 3, 1912

SOME REMARKABLE DISCOVERIES REGARDING A  
COMMON HOUSEHOLD INSECT

THE literature of the nature-study movement abounds in remarkable statements regarding the morphology, development and biology of bird, beast and fowl, but scientific men have hesitated to discard the older theories in favor of unsupported statements from such sources. The public can hardly be expected to be so suspicious of the publications of the United States Public Health Service and it would seem that some of the many astounding facts recently disclosed regarding the common bed-bug should receive wider currency than is assured by their publication in Public Health Reports, for November 15, 1912, pp. 1854-1856.

The early history of this pest is shrouded in mystery, but we are informed that it is not at all improbable that when our arboreal forebears forsook tree-top for caves they took this little six-legged pest with them.

This seems to be more likely because the English sparrows and the swallow harbor a very similar species, and not infrequently their nests are crowded with these vermin.

The biting apparatus of this parasite is quite elaborate, and consists of several parts. In biting, the bug anchors itself to the skin with a couple of hooks called mandibles, and then inserts the maxillæ, which are shaped like two gutters, the concave surfaces of which look towards each other.

Normally it feeds upon human blood, but lacking this it will live upon decaying wood or the dust in floor cracks.

The eggs are somewhat rounded, white objects, and are laid in collections in crevices or other suitable places. In about a week or ten days after they are laid the eggs hatch out as little worms, called larvæ; these are yellowish white in color at first but later become almost brown. They feed and go into a resting state, from which they emerge as pupæ; they then shed their skins five times and at last become full grown adults.

To illustrate its activity in its search for food may be quoted the story of the ingenious traveler who, in order to keep bed-bugs out of his bed, set the legs of the bedstead in pans of water, whereupon the bed-bugs climbed the walls, got out on the ceiling over the bed and dropped down upon the victim. In order to thwart his enemies the traveler was obliged to raise his umbrella.

As this is not marked as a joke, and is no more so than the other statements, we may expect to see it quoted as from good authority.

Much important information regarding the bed-bug has been published by the Bureau of Entomology, and one is surprised that so many interesting and valuable facts should have escaped the attention of Dr. Howard and Dr. Marlatt and their capable assistants. It is regrettable that the information contained in the article before us was not shared with them before it was printed in a government periodical, which the public is entitled to regard as authoritative.

WM. A. RILEY

#### SCIENTIFIC BOOKS

*A Manual Flora of Egypt.* By Dr. RENO MUSCHLER, Assistant in the Royal Botanic Gardens, Dahlem-Berlin; Corresponding Member of the "Institut Egyptien," and others. With a preface by Professor PAUL ASCHERSON and Professor GEORG SCHWEINFURTH. Berlin, R. Friedländer & Sohn. 1912. Octavo, in two volumes. Pp. 12 + 1312.

The author tells us that "the history of botanical discovery in Egypt falls conveniently into two periods." These chronologically are (1) from 1761 to 1867, and (2) from 1867 to the present. In the earlier period we have Forskal's "*Flora Aegyptiaco-Arabica*" (1775), Delile's "*Flore d'Egypt*" (1813), Baker-Webb's "*Fragmenta Florulae Aethiopico-Aegyptiacae*" (1854), and in the later period, Schweinfurth's "*Beitraege zur Flora Aethiopiens*" (1867), Ascherson and Schweinfurth's "*Illustration de la Flore d'Egypt*" (1887), Volkens's "*Die Flora der Aegyptisch-Arabischen Wüste auf Grundlage anatomisch-physiologischer Forschungen*" (1887), Sicken-

berger's "*Contributions a la Flore d'Egypt*" (1908). To this list, of course, should be added Boissier's "*Flora Orientalis*" (1867-1888), covering a vastly larger field than Egypt.

The present work is the outgrowth of the labors of Ascherson and Schweinfurth, who "for some time already had decided upon the publication of a more adequate work dealing entirely with the Egyptian flora, but, owing to a great many more urgent tasks which took up all our time, we had to put off the realization of this plan from one year to another." Accordingly the labor of preparing the present work was entrusted to Dr. Muschler, who had at his disposal "the most extensive and best arranged collections ever made in Egypt."

In a chapter on Phytogeography and Geology in the appendix Egypt is divided into five regions, as follows: (I.) the Mediterranean Region, including the extreme northern area; (II.) the Nile-Delta Region, including the Delta proper at the north, and the Nile valley to Aswan near the Nubian frontier; (III.) the Oases of the Lybian Desert; (IV.) the Desert Region, including the Lybian, Isthmic, Northern and Southern Arabian deserts; (V.) the Red Sea Region. In the treatment of these regions many interesting botanical facts are brought out in connection with a discussion of their geological and physiographical features.

We may well quote several paragraphs in regard to the Desert Region:

The desert is characterized by a vegetation of fairly uniform character in its main features. The means whereby the existence of these desert plants is preserved reside rather in the peculiarities of their organization than in any specially favoring influences of the environment. The most prominent feature of this organization is the capacity which the vegetative organs have acquired to resist factors so inimical to life as heat and drought, factors whose common tendency is to annihilate all living things. Though the minute details of these multifarious protective arrangements are not visible to the naked eye, they find obvious expression in the external conformation of the various organs of the plants. Thin-stemmed